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George V. Voinovich
Governor

December 4, 2000

Mr. Johnny Reising
U.S. DOE FEMP
P.O. Box 398705
Cincinnati, OH 45329-8705

RE: COMMENTS ON THE INTEGRATED ENVIRONMENTAL MONITORING PLAN for October 2000, 2505-WP-0022 REV.2 Draft Final.

Dear Mr. Reising:

Ohio EPA has reviewed the Integrated Environmental Monitoring Plan for October 2000, 2505-WP-0022 REV 2, Draft Final submitted by DOE. Ohio EPA's comments are attached.

If there are any questions, please contact me at (937) 285-6466 or Donna Bohannon at (937) 285-6543.

Sincerely,

Tom Schneider

for Thomas A. Schneider
Fernald Project Manager
Office of Federal Facilities Oversight

cc: Jim Saric U.S. EPA
Terry Hagen, Fluor Daniel Fernald
Francis Hodge, Tetratech
Ruth Vandegrift, ODH
Mark Schupe, GeoTrans
Manager TPSS, DERR

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INTEGRATED ENVIRONMENTAL MONITORING PLAN
October 2000, 2505-WP-0022
Rev. 2-Draft Final
DRAFT COMMENTS

1) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 1.3 Pg. #: 1-5 Line #: NA Code: C
Comment: The text states that the "criteria provide the basis for determining when project-specific process control monitoring within environmental media will be considered by the affected projects." Who establishes the criteria?
The second criteria is somewhat unclear. How does it provide a basis for project specific monitoring implementation?

2) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 1.3 Pg. #: 1-6 Line #: NA Code: C
Comment: The statement is made that "The IEMP will provide a reporting link for project-specific compliance and process control results, as necessary, to fulfill its responsibility for providing a comprehensive evaluation of site-wide environmental conditions." The Ohio EPA agrees that the IEMP should be the reporting link for project specific monitoring results. The actual reporting of results via the IEMP has been less than expected. For example Ohio EPA considers, the IEMP the reporting links for the results of sampling the storm water management pond in the waste pit area prior to discharge to Paddys Run. Reporting of these results was not made until they were included as a response to comment #8 of the 1999 Integrated Site Environmental Report. Included in the response was the statement "This sampling is considered project specific process control sampling and as such, will not be routinely updated in the IEMP annual integrated site environmental or quarterly status reports." Ohio EPA finds this response contrary to the statement in the October 2000 revision C of the IEMP and contrary to Ohio EPA expectation that results such as the date of discharge, total suspended solids and total uranium results of the storm water management pond will be reported in a timely manner. This data is useful in providing a comprehensive evaluation of site-wide environmental conditions, particularly in evaluating pilot plant drainage ditch discharges to Paddys Run, and off site. Ohio EPA expects the IEMP to be the vehicle for reporting results such as these.

3) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 1.4 Pg. #: 1-6 Line #: NA Code: E
Comment: This states that "The IEMP consists of seven sections and four appendices. The remaining sections..." However there are 8 sections in the IEMP.

4) Commenting Organization: Ohio EPA Commentor: DSW

Section #: 1.5.2 Pg. #: 1-10 Line #: NA Code: C
Comment: This section describes three conditions under which FEMP will give immediate notification to Ohio EPA. Other required notifications of Ohio EPA are not included here, including those which require notification within 24 hours per the NPDES permit or the hazardous waste spill reporting requirements.

5) Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: 3 Pg.#: 3-14 Line #: 5 Code: E
Comment: The first sentence of the first paragraph should be included in the list of bulleted items that precede the first paragraph.

6) Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: 3 Pg.#: 3-16 Line #: 13 Code: C
Comment: Well construction details for Extraction Wells 32446 and 32447 should be provided. A review of the Specification Package entitled "Piping and Well Installation Specifications for Two Additional Extraction Wells" dated November 1, but 1999 revealed no construction details for these wells.

7) Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: 3 Pg.#: 3-23 Line #: 10 Code: E
Comment: Insert a space between "migrate" and "vertically."

8) Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: 3 Pg.#: 3-27 Line #: 5 Code: C
Comment: The rationale for abandoning Monitoring Wells 2551 and 3551 should be provided. These wells are located along the southwestern boundary of the uranium plume. Uranium concentrations in Monitoring Well 2551 are often above the FRL. Although the prevailing groundwater flow direction in the general vicinity has been indicated to be toward the south and east, it would seem appropriate to maintain monitoring wells in this area for monitoring the plume boundary.

9) Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: 3 Pg.#: 3-33 Line #: 1 Code: C
Comment: It is indicated that weekly monitoring in selected Paddys Run Road Site wells will be conducted to assess whether potential increases in South Plume Module pumping rates will adversely affect arsenic concentrations in the plume. Samples will be collected weekly for a minimum of three weeks after the increase. The data will be used to evaluate the presence of an increasing trend. The increased frequency of sampling will be discontinued if no increasing trend is observed. Will three additional

samples be adequate to distinguish an increasing trend from random noise in the data? Will the arsenic data collected before the pump age rate increase be sufficient to establish any pre-existing trends that could potentially mask the trend caused by the pump age rate change?

10) Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: 3 Pg.#: 3-51 Line #: 17 Code: C
Comment: An analysis of water level data from well clusters installed in the former production area indicates that slight downward gradients exist in this area. Given the existence of these downward gradients and that the clay interbed separating the Type 3 and 4 monitoring horizons are discontinuous at some locations in the former production area, the Type 4 Property Boundary Program monitoring wells should be retained for monitoring as a necessary precaution in the proposed plan. These wells include the following: 4424, 41217, 4426, 4067, and 4432. An additional consideration for continued monitoring of these wells is that they will provide the ability to verify that no impacts to offsite groundwater quality in the Type 4 zone occur as the result of startup of new groundwater restoration modules in the South Field, Pilot Plant Drainage Ditch, and Waste Pit areas. It should be noted that in the 1997-98 IEMP, DOE included these five wells in the Property Boundary Monitoring Program to monitor aquifer conditions through startup of the South Field and Injection Demonstration modules. Likewise, monitoring the property boundary wells during the startup of the new aquifer restoration wells planned for the South Field, Pilot Plant Drainage Ditch, and Waste Pits areas should also be included under the proposed plan.

11) Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: 3 Pg.#: Table 3-4 Line #: NA Code: C
Comment: Well construction details (northing, easting, ground surface elevation, top of screen, bottom of screen) are needed for the following wells shown in the table: 32446, 32447, 6881, 6880, 62433, 22299, 22300, 22301, 32305, and 32306.

12) Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: 3 Pg.#: Table 3-4 Line #: NA Code: C
Comment: Well construction details (top of screen and bottom of screen) are needed for the following wells shown in the table: 32304, 32307, 22302, 22303, and 62408.

13) Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: 3 Pg.#: 3-61 Line #: 18 Code: C
Comment: The IEMP data for each monitoring event should include the final turbidity levels achieved for each monitoring well at the time of sample collection. In addition,

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the IEMP data should include the filtered and unfiltered analysis results for total uranium.

14) Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: 3 Pg.#: 3-74 Line #: 25 Code: E
Comment: Change "concentrations' profiles" to "concentration profiles."

15) Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: 3 Pg.#: 3-75 Line #: 26 Code: C
Comment: The text referenced indicates that groundwater monitoring changes will be communicated through the yearly reviews and biennial revisions to the IEMP. The IEMP Quarterly Report for Second Quarter, however, 2000 proclaimed that five wells had been plugged and abandoned during that quarter. No mention of any planned abandonments was provided in the November 1, 1999 Annual Review of the IEMP. Better communication is needed regarding the justification and scheduling of monitoring well abandonment. As required in the cited text, DOE should start communicating monitoring changes in a timely manner. For example, the yearly reviews and biennial revisions should be used to communicate the wells that are scheduled for abandonment in the coming year. For wells that are to be abandoned because they are damaged, DOE should propose a schedule for installing a replacement well, if necessary. If no replacement is to be installed, DOE should provide a rationale for eliminating the monitoring location.

16) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4.2.2 Pg. #: 4-3 Line #: Bullet #2 Code: C
Comment: This references the surface water BTVs protective of ecological receptors from the OU5 FS. The BTV used for uranium concentrations in surface water was 890 g/L (taken from Parkhurst et al 1984). Please note that DOE is currently using 150 g/L (eg. Depleted UF6 PEIS, Section D.2.6) which is taken from Hyne et al (1992). It does not appear as though this will change the current sampling prescribed by the IEMP, however it will be important to demonstrate concentrations below this value at the close of remediation activities.

17) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4.2.2 Pg. #: 4-4 Line #: NA Code: C
Comment: The statement is made that "The single project-specific surface water monitoring driver is the Storm Water Pollution Prevention Plan..." There are other drivers for project-specific surface water monitoring (e.g. OAC 3745-01-04) and the word "single" is inappropriate. Addressing the regulatory drivers for project-specific

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monitoring is not appropriate for this document (see comment: Table 4-1).

18) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4 Pg. #: 4-5 Line #: Table 4-1 Code: C
Comment: It is inappropriate to address/limit/describe project-specific drivers or monitoring in this document. Project-specific monitoring is the responsibility of the individual project. It is the responsibility of the IEMP to report the results of the project-specific monitoring and to monitor the collective impact of remediation projects on a particular medium. Each project must conduct its own ARAR and TBC analysis, including any specific concerns to that individual project. This is beyond the programmatic scope of the IEMP. It would be prudent for the IEMP monitoring group to work with the individual projects to develop the most efficient monitoring plan for the individual projects. However, it is beyond the scope of the IEMP to direct these sampling efforts. As indicated in section 4.3, the IEMP will provide surveillance monitoring downstream from the project specific controls. This essentially defines the programmatic boundary for surface water as the geographic boundary of the specific project. Beyond that (geographic-programmatic) boundary is the responsibility of the specific project and should be addressed on a project by project basis.

19) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4 Pg. #: 4-15 Line #: Figure 4-3 Code: C
Comment: This figure shows the area in zone C (approximately from New Haven Road up gradient half way to Willey Road) as groundwater discharge in all seasons. I assume this is taken from the level of groundwater (as indicated on the figure) and the level of the stream bed. From personal observation, I have never seen groundwater entering the stream bed in that zone. Many times the stream has been dry and I have seen areas further downstream with groundwater feeds, but never in the area indicated on the Figure 4-3.

20) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4.4.2.3 Pg. #: 4-16 Line #: NA Code: C
Comment: See comment above (section 4.2.2) about revising the BTV for uranium in surface water (from 890 g/L to 150 g/L).

21) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4 Pg. #: 4-24 Line #: Figure 4-7 Code: C
Comment: The drainage to sample location STRM 4004 has been modified by the construction of the haul road and wheel wash. It may be prudent to add a storm water sampling point up gradient from STRM 4004 to capture runoff from the haul road. There are a few places along Paddys Run that have a drainage path cut from the haul

road drainage.

22) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4.6.1 Pg. #: 4-47 Line #: NA Code: C
Comment: With respect to the statement "To provide a better understanding of the uncontrolled runoff flow patterns as FEMP remediation activities are occurring, updates of the uncontrolled runoff flow directions will also be reported," water has been diverted from STRM 4004 with the construction of the haul road and wheel wash. An additional sampling location should be sought up gradient (see comment on Figure 4-7)

23) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4.6.1 Pg. #: 4-47 Line #: NA Code: C
Comment: Please change "If these constituents are not detected above FRLs in the surface water for one calendar year of sampling...," to "If these constituents are not detected above FRLs or BTVs in the surface water for one calendar year of sampling..."

24) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4.6.1 Pg. #: 4-48 Line #: Last bullet (Community Concerns)Code: C
Comment: There is a community organization called Friends of the Great Miami that has expressed concern over Fernald (see http://www.riversunlimited.org/page4.html). Has there been any outreach to or communication with this group about their concerns?

25) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 4.6.2 Pg. #: 4-49, 4-50 Line #: NA Code: C
Comment: The IEMP annual integrated site environmental report should include a dose estimate (DOE 5400.1).

26) Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: 5 Pg.#: 5-22 Line #: 8 Code: C
Comment: According to the sampling program, sediment samples will be collected annually in the summer. Rather than stating in very general terms that the sediment sampling data will be reported using the quarterly summaries, the reporting section of this plan should designate the specific quarter in which new sediment sampling results for a given year will be posted on the Data Extranet Site.

27) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 5.1 Pg. #: 5-2 Line #: 1st paragraph Code: C
Comment: Does this mean that the IEMP sampling will be used as part of the project-specific sampling or that the project specific planning will use the IEMP data to produce their plan, or something different or both? Please explain.

28) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 5.2.2 Pg. #: 5-3, 5-4 Line #: last and first bullets Code: E
Comment: The first bulleted item at the top of page 5-4 is actually a continuation of the last bulleted items on page 5-3 and should not have a bullet mark, only be indented.

29) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 5.2.2 Pg. #: 5-4 .Line #: NA Code: C
Comment: We agree with the decision to continue sediment sampling believing it not only prudent but valuable in establishing trends. Having data gaps during this period of remediation could make it difficult to assess any upward and downward trends that may appear in the future.

30) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 5 Pg. #: 5-5 Line #: Table 5-1 Code: C
Comment: It is not appropriate for the IEMP to address/limit/describe project-specific drivers or monitoring in this document. Project-specific monitoring is the responsibility of the individual project. It is the responsibility of the IEMP to report the results of the project-specific monitoring and to monitor the collective impact of remediation projects on a particular medium. Each project must conduct its own ARAR and TBC analysis, including any specific concerns to that individual project. This is beyond the programmatic scope of the IEMP. It would be prudent for the IEMP monitoring group to work with the individual projects to develop the most efficient monitoring plan for the individual projects. However, it is beyond the scope of the IEMP to direct these sampling efforts.

31) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 5.3 Pg. #: 5-5, 5-6 Line #: NA Code: C
Comment: The section does not include the pilot plant drainage ditch, which, as noted in Section 4.4.2, has been a source of the south plume ground water contamination (along with Paddys Run and the Storm Sewer Outfall Ditch). What are the plans of the IEMP with respect to the sediments in the pilot plant drainage ditch?

32) Commenting Organization: OEPA Commentor: OFFO
Section #: 5.5.2.2 Pg.#: 5-22 Line #: Code: C
Comment: This section addresses the former Agreement in Principle between the State of Ohio and DOE. However, the AIP was dissolved about two years ago. Please remove this language from the text.

33) Commenting Organization: Ohio EPA Commentor: DSW

Section #: 7.6.1 Pg. #: 7-13 Line #: 3rd bullet Code: E
Comment: The information under the third bullet on this page should not be bulleted as it refers to the bullet above it ("Are community concerns being met through the produce sampling?").

34) Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: 8 Pg.#: 8-6 Line #: 8 Code: C
Comment: In order to maintain some structure to the IEMP reporting process, a specific time frame is required for submittal of the quarterly summaries. A period of 30 days following the end of each quarter would seem to be appropriate.

35) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 8.2.1 Pg. #: 8-1, 8-2 Line #: NA Code: C
Comment: Ohio EPA expects the IEMP to be the reporting link for project-specific environmental monitoring as out lined in the comment above (section 1.3).

36) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 8.3.1 Pg. #: 8-5 Line #: 1st bullet Code: C
Comment: DOE Order 5400.1 prescribes the reporting of a potential dose to the public (II,8,c) but is omitted from the IEMP reporting strategy. Please explain.

37) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 8.3.1 Pg #: 8.5 Line #: NA Code: C
Comment: Not listed under the drivers is DOE/EH-0713T (Environmental Regulatory Guide for Radiological Effluent Monitoring and Environmental Surveillance)(this is noted for being listed in the references)0, 10 CFR 834 (Radiation Protection of the Public and the Environment; Proposed Rule), or the new: DOE Standard, A Graded Approach for Evaluating Radiation Doses to Aquatic and Terrestrial Biota (Available for interim DOE use, DOE-STD-XXXX-00, Proposed,). Please explain why they are not in the driver's list, or the references.

38) Commenting Organization: Ohio EPA Commentor: DSW
Section #: 8.3.3 Pg. #: 8-7 Line #: NA Code: C
Comment: The statement is made that the summaries "...will be submitted to the regulatory agencies for informational purposes, and will not be subject to regulatory review and comment." Please be aware that, after reviewing the summaries, we may be offering suggestions on content/format. Although not part of a regulatory review, we should not eliminate the positive exchange of ideas for improvement.

39) Commenting Organization: OEPA Commentor: OFFO
Section #: 8.3.3 Pg.#: 8-7 Line #: NA Code: C
Comment: It is understandable that the quarterly summaries serve as documentation and the Extranet Site provides the Agencies the data for "regulatory review." However if there is a discrepancy in the data, by what mechanism, other than the weekly conference calls, will DOE use to resolve the issue? Ohio EPA's concern is that in the likelihood of a "notable event," we wont be notified until after the fact.

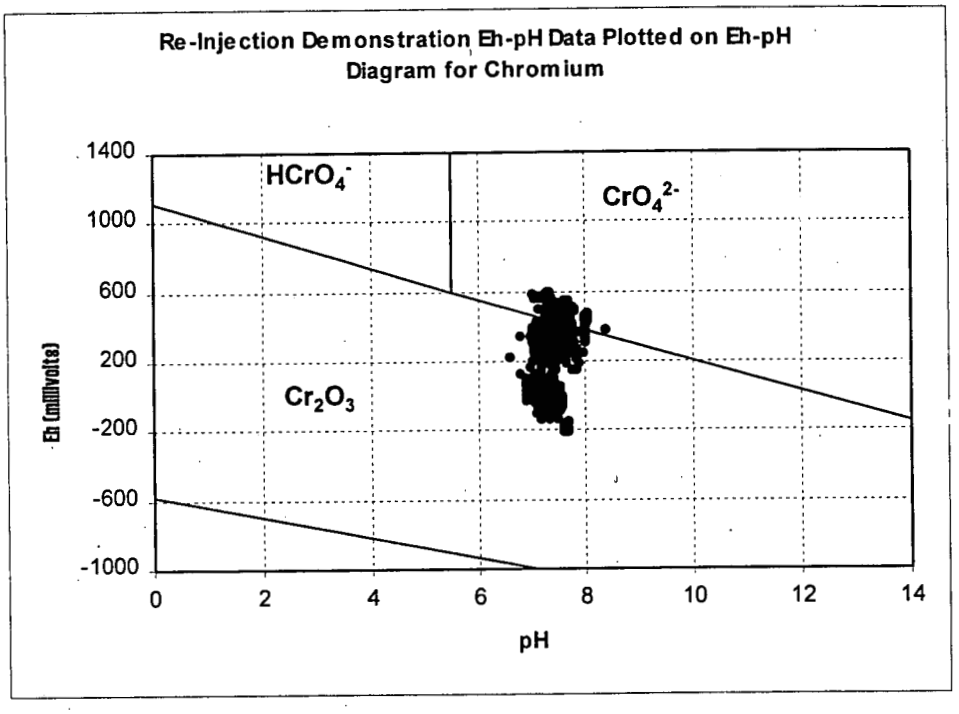
40) Commenting Organization: OEPA Commentor: OFFO
Section #: 8.3.3, Figure 8-1 Pg.#: 8-9 Line #: NA Code: C
Comment: A) The text below Figure 8-1 states that the sediment data will be "added to the Extranet Site as it becomes available." If sediment is collected in June, wouldn't data be available by August? Figure 8-1 shows that the data would be reported in November on the Extranet Site. Please clarify.

B's) In section 7.6.2, page 7-13 the text states that biota data will be available on the Extranet Site. However Figure 8-1, in section 8.3.3, does not show the month when the data will be reported on the Extranet Site. Please clarify.

41) Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: Append. A Pg.#: Figure A-1 Line #: NA Code: C
Comment: The first occurrence of "<N" below the second text box should be changed to ">N" to indicate constituents that are not mobile and persistent but have been detected in the GMA.

42) Commenting Organization: OEPA Commentor: HSI GeoTrans, Inc.
Section #: Append. A Pg.#: A-13 Line #: 13 Code: C
Comment: The chromium investigation discussed in the 1998 Integrated Environmental Report considered Eh-pH conditions in the GMA prior to the initiation of re-injection. Under those conditions, it is agreed that hexavalent chromium species are not formed. The water used for re-injection, however, is enriched in oxygen. Re-injection of this water, therefore, has resulted in the establishment of conditions that locally are, at least on a transient basis, favorable for hexavalent chromium species. The plot below compares the Re-injection Demonstration Project Eh-pH data from the nine monitoring wells where in-situ water quality data was collected with the chromium Eh-pH diagram. The data were collected over monthly 24 hour periods in the year
long data collection period for the demonstration project. Approximately 20 percent of the measurements fall within the region of the diagram where the hexavalent species chromate (CrO_4^{2-}) is stable. Accordingly, DOE should continue to analyze groundwater

samples for hexavalent chromium collected in the vicinity of injection wells located in areas where trivalent chromium has been observed or could exist because of previous site activities.



The following comments are new comments and were not e-mailed to DOE last week. They do not follow the sequence of our other comments.

Section 6.0 Air Monitoring Program

43) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.0 Pg #: General Comment Line #: Code: C
Comment: References to "predecessor EMP" may be inappropriate. We have been operating with the IEMP for 2 years. Consider only referencing previous version of IEMP.

44) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.2.2 Pg #: 6-6 Line #: na Code: C
Comment: The last sentence on this page states that, "The visible emission standard for asbestos is closely tied to asbestos management, and is not within the scope of the IEMP". Which organization is responsible for ensuring compliance with OAC 3745-20-06, OAC 3745-20-07(A) and (C)?

45) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.4.1 Pg #: 6-11 Line #: Code: C
Comment: The "Program Expectations" should include data sufficient to determine compliance with the radon concentration limits in Proposed 10 CFR 834. Proposed 10 CFR 834 is a ARAR/TBC in the design packages for the Silos project.

46) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.4.2.1 Pg #: 6-15 Line #: Code: C
Comment: Total particulate data should also be used to evaluate the effectiveness of site-wide efforts to minimize fugitive dust emissions.

47) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.6.1.1 Pg #: 6-34 Line #: Code: C
Comment: The data evaluation for each section should also include the question, "Are the emission control measures effective in maintaining exposures to the public As Low As Reasonable Achievable (ALARA)?".

48) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.6.1.2 Pg #: 6-37 Line #: Code: C
Comment: Include, "Are radon concentrations below the limits set in Proposed 10 CFR 834?". This proposed rule is an ARAR/TBC for the silos project.

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49) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.6.2 Pg #: 6-41 Line #: Code: C
Comment: General Comment: Meteorological data should also be available on the extranet site. Specific parameters should include temperature, pressure, wind speed and direction, rainfall, and stability class.

50) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: 6.6.2 Pg #: Line #: Code: C
Comment: Data reporting over the extranet site should be flexible as use and availability of the data are enhanced. Different parameters and/or organization of data should be allowed to change to meet the end-users needs.

Appendix C, Dose Assessment

51) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: General Comment Pg #: Line #: Code: C
Comment: This appendix does not include a methodology for the assessment of dose due to radon exposures. Radon dose has been historically been reported in annual environmental reports and should continue. A radon dose assessment section should be added to this appendix.

Appendix D, Natural Resource Monitoring Plan

52) Commenting Organization: Ohio EPA Commentor: OFFO
Section #: D.4.2 Pg #: D-10 Line #: Code: C
Comment: Ohio EPA does not agree with the language suggesting wetlands will not be delineated. As our response to DOE's letter on construction related wetlands states, each potential wetland should be evaluated individually for a determination on the need for removal and/or mitigation. The section should be revised to more accurately reflect the process for evaluating these types of wetlands.